

1008245-110704

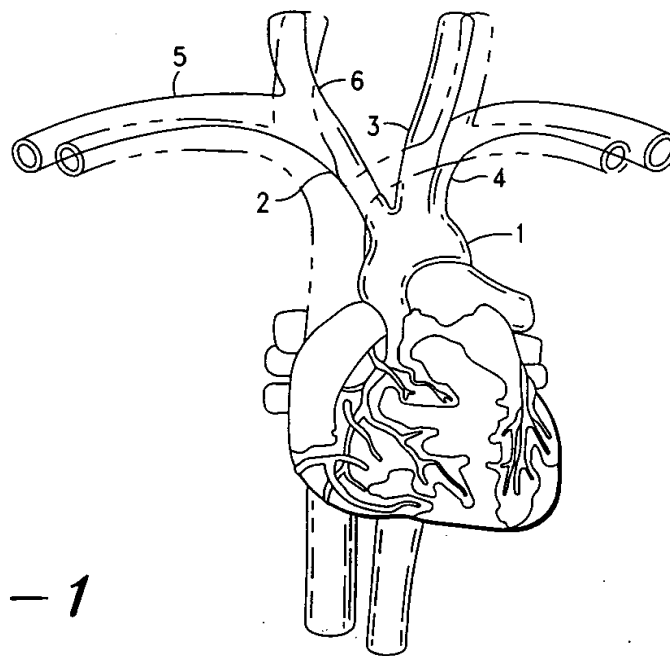


FIG. - 1

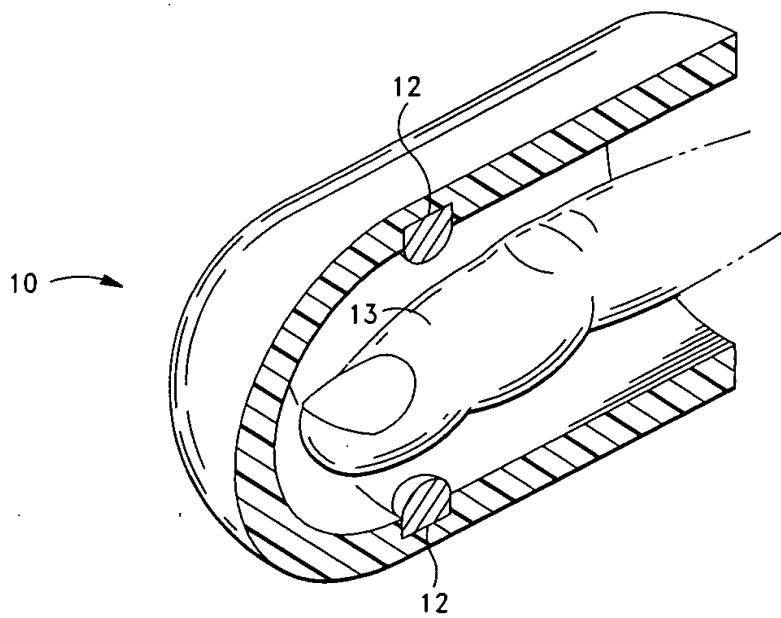


FIG. - 2

1008245-110701

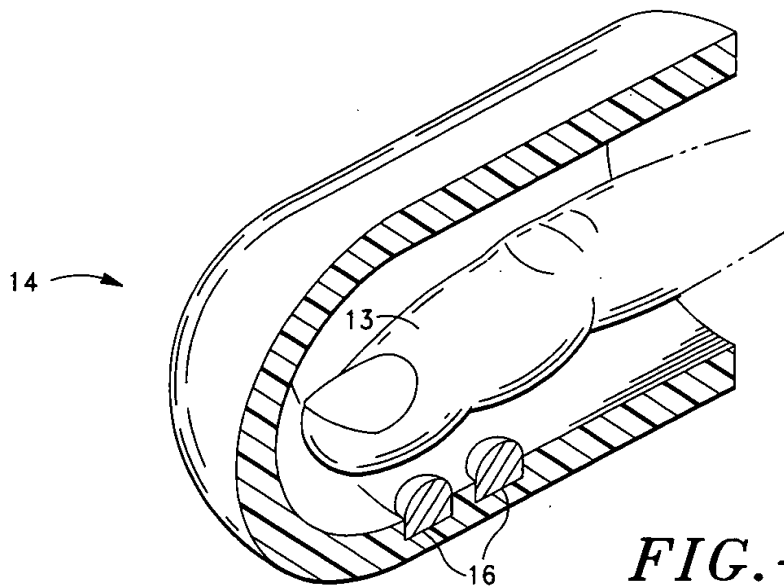


FIG. - 3

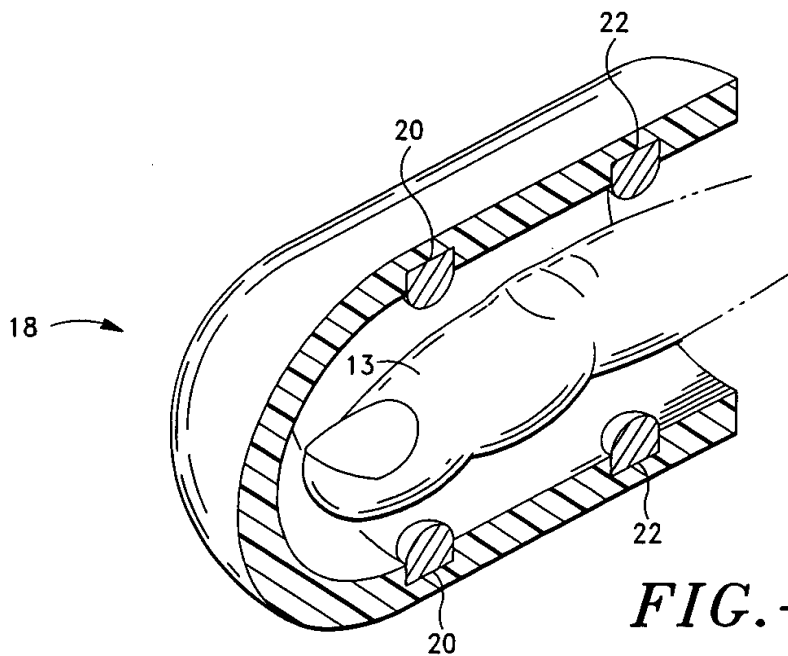


FIG. - 4

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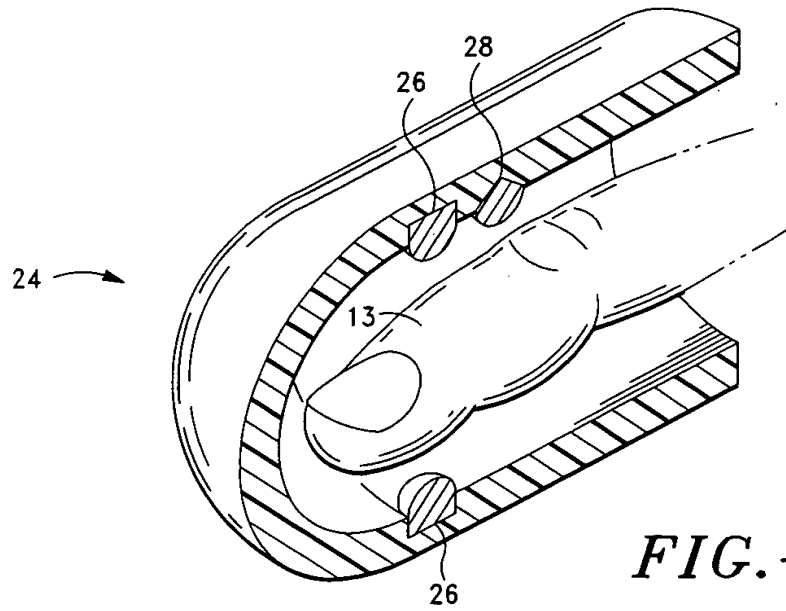


FIG.-5

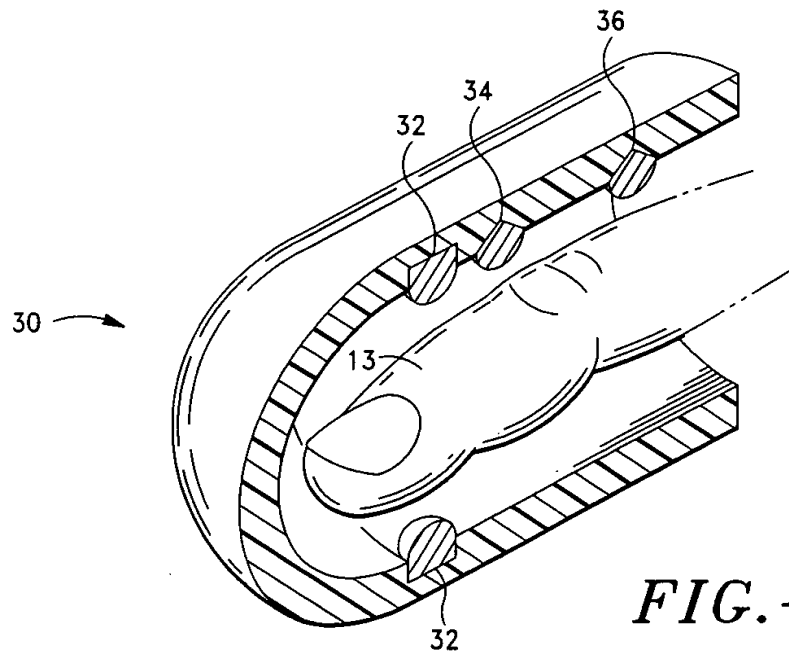
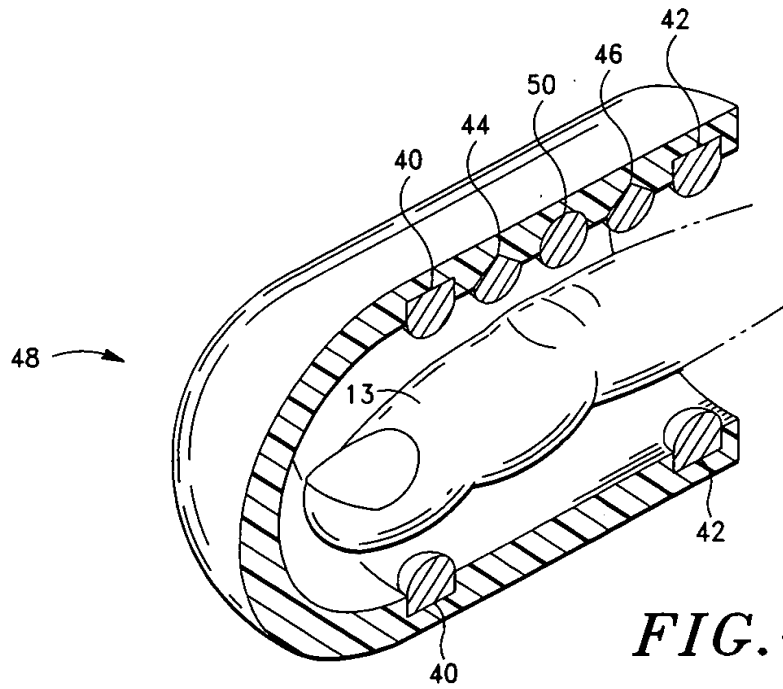
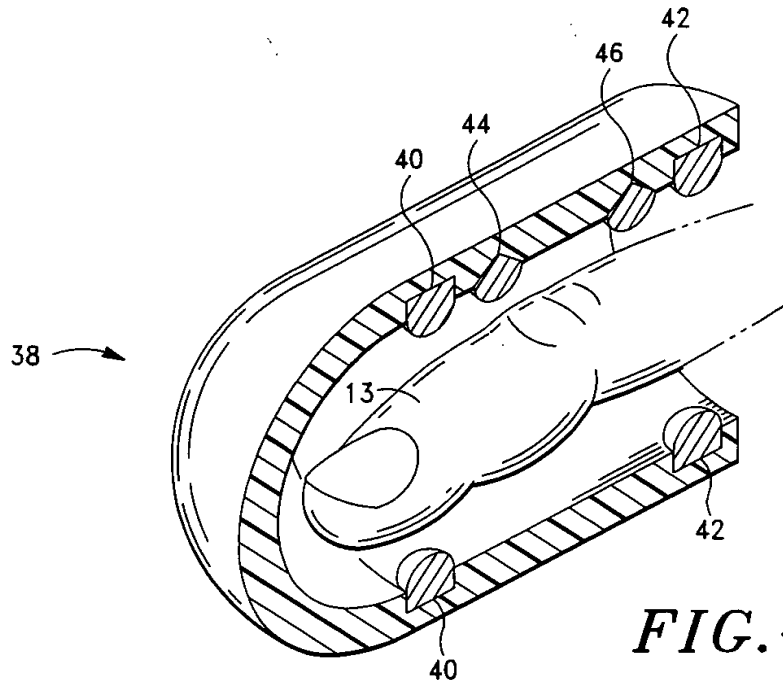


FIG.-6

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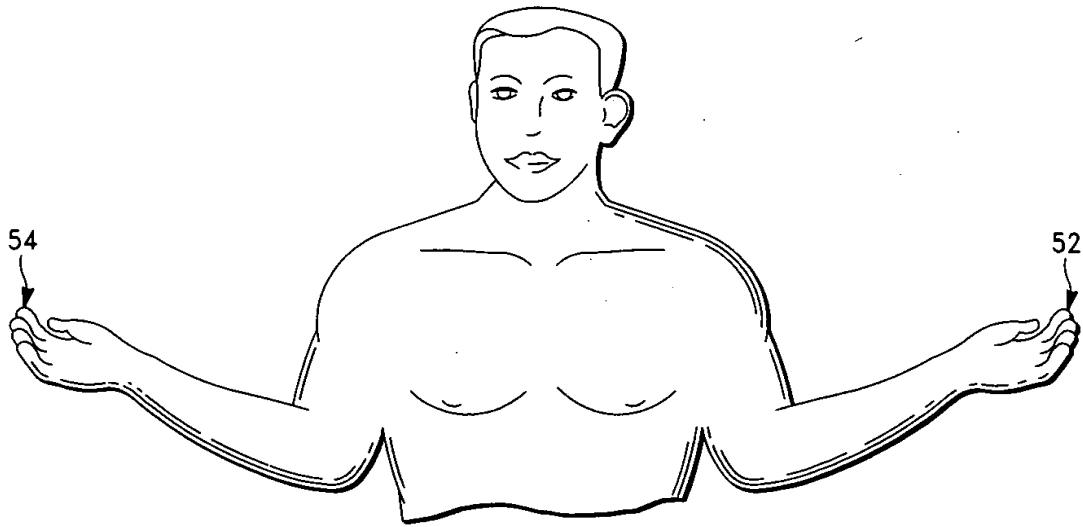


FIG.-9

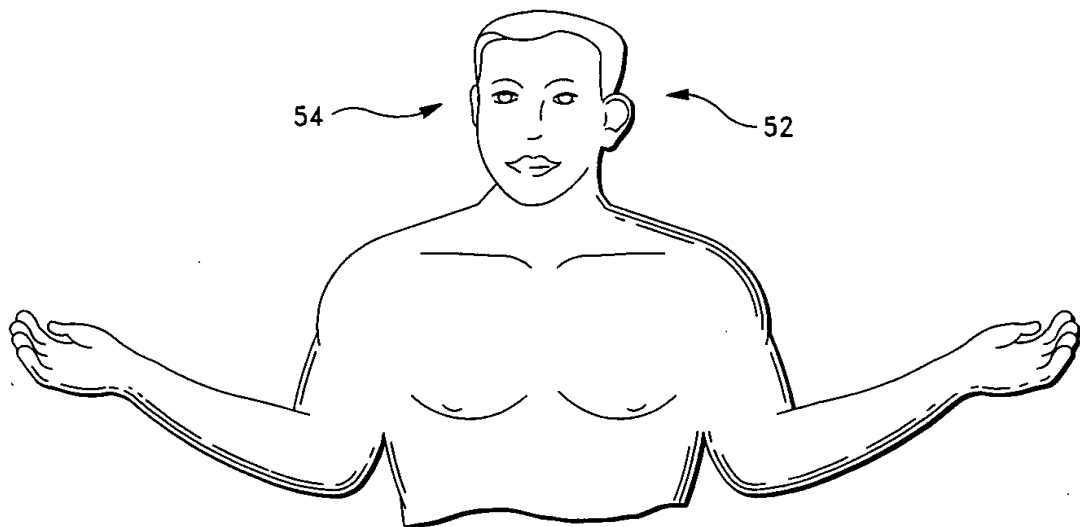


FIG.-10

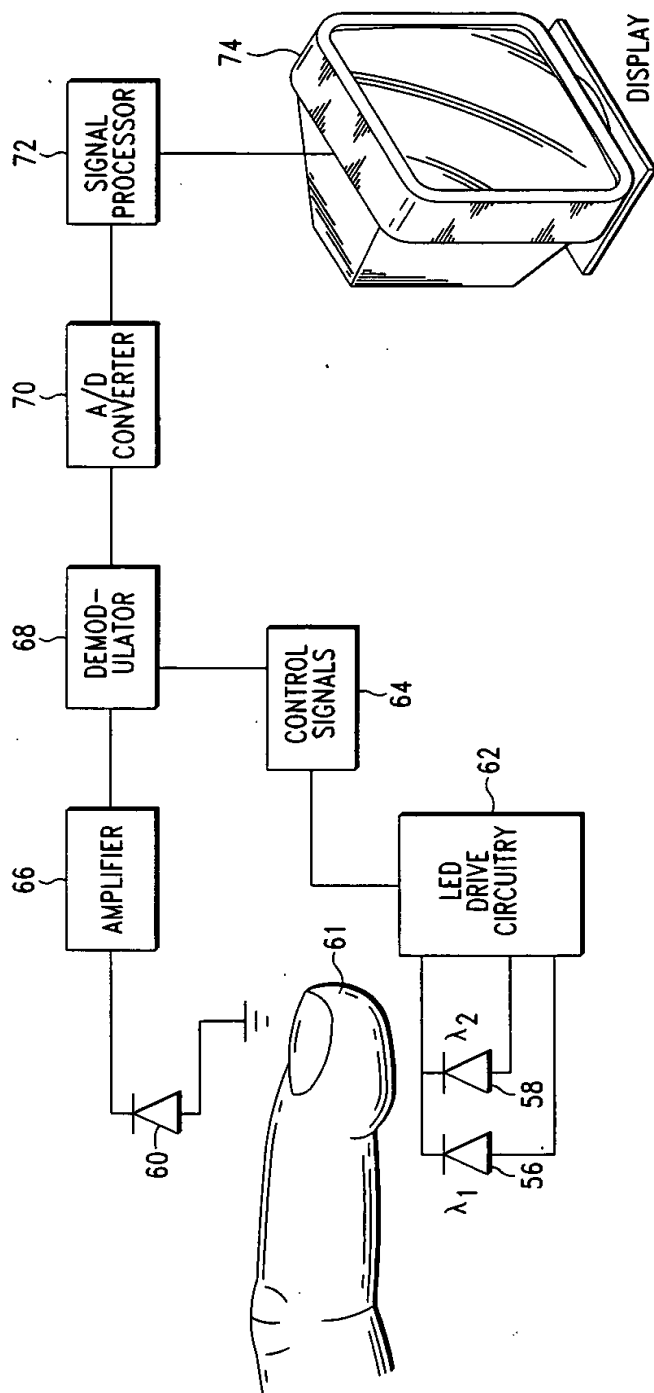


FIG.-11

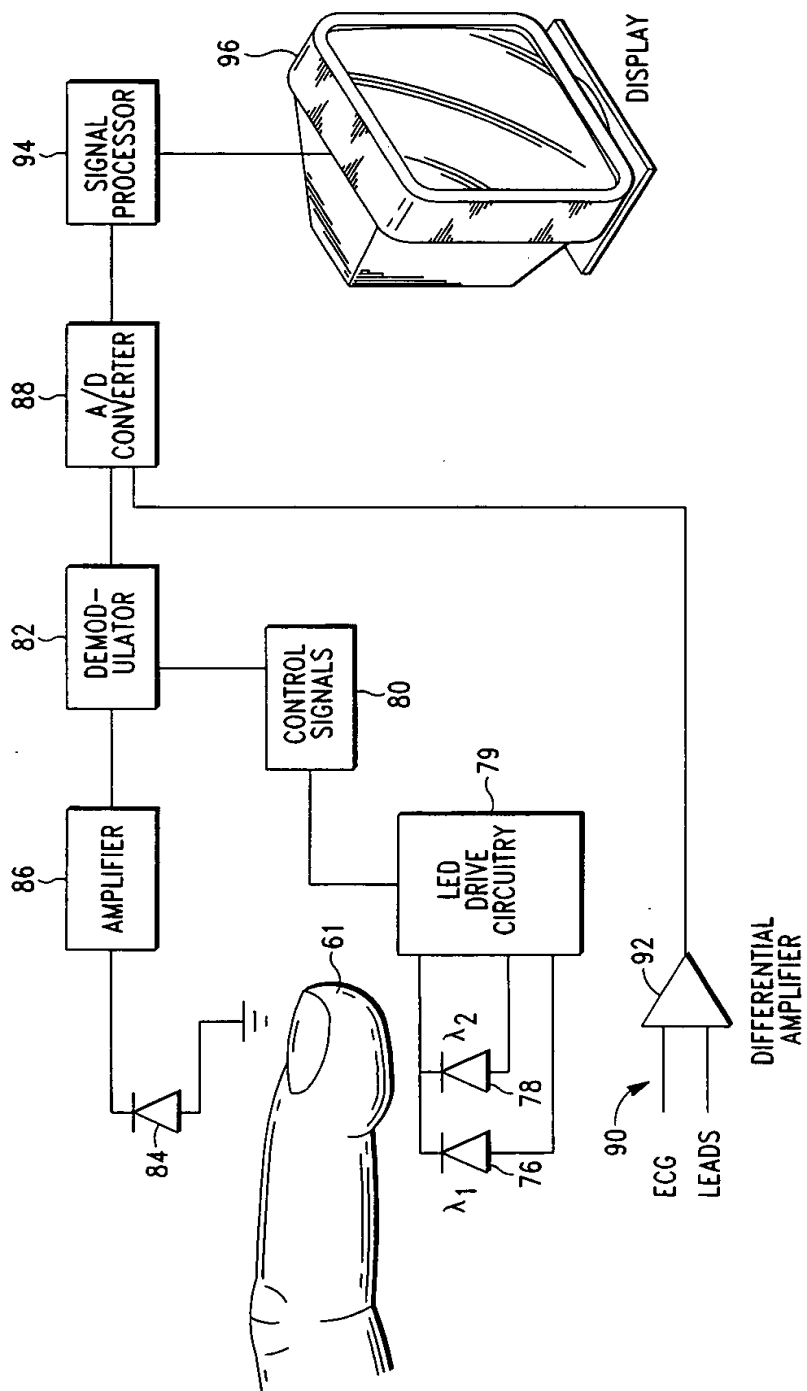


FIG.-12

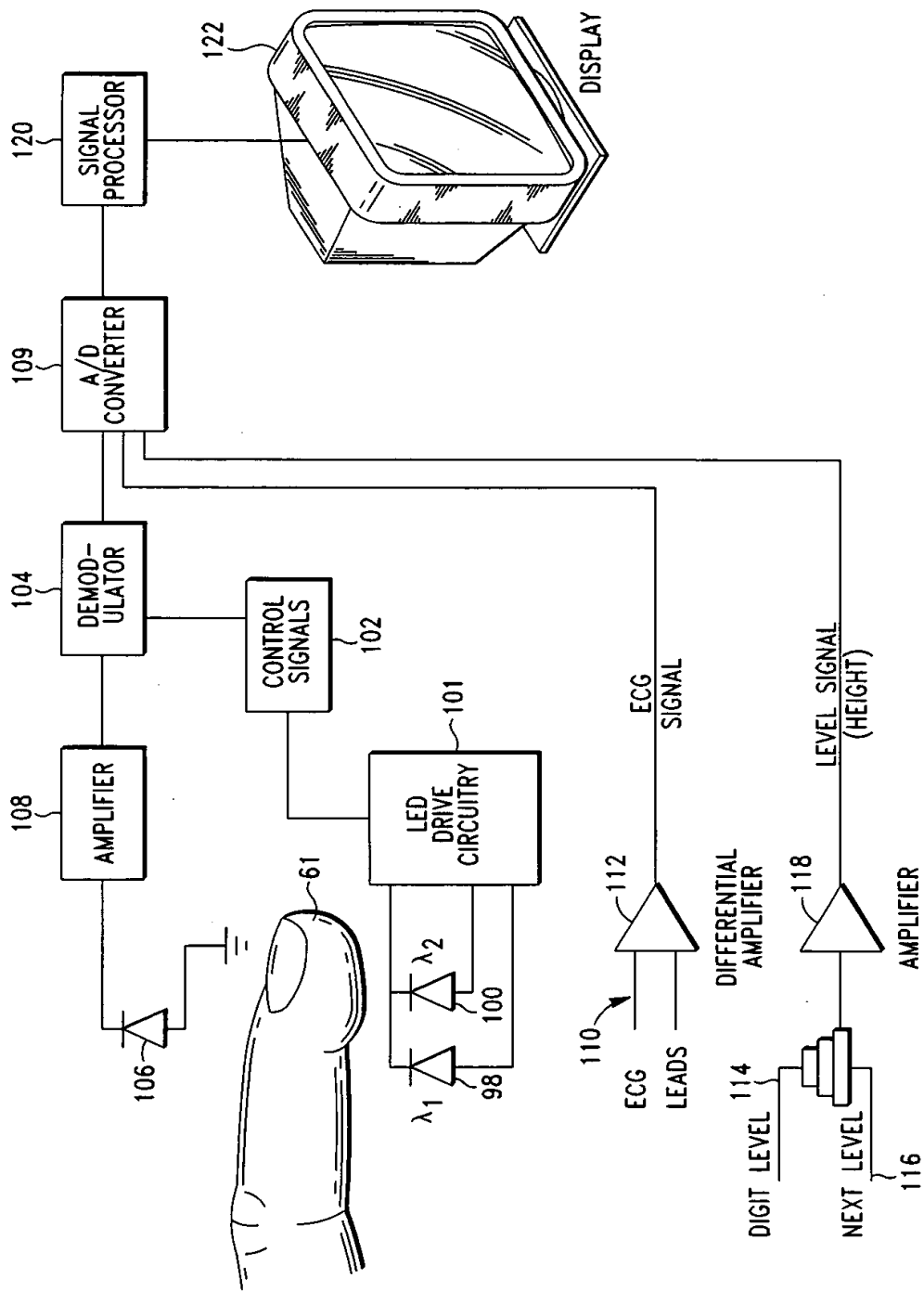


FIG.-13

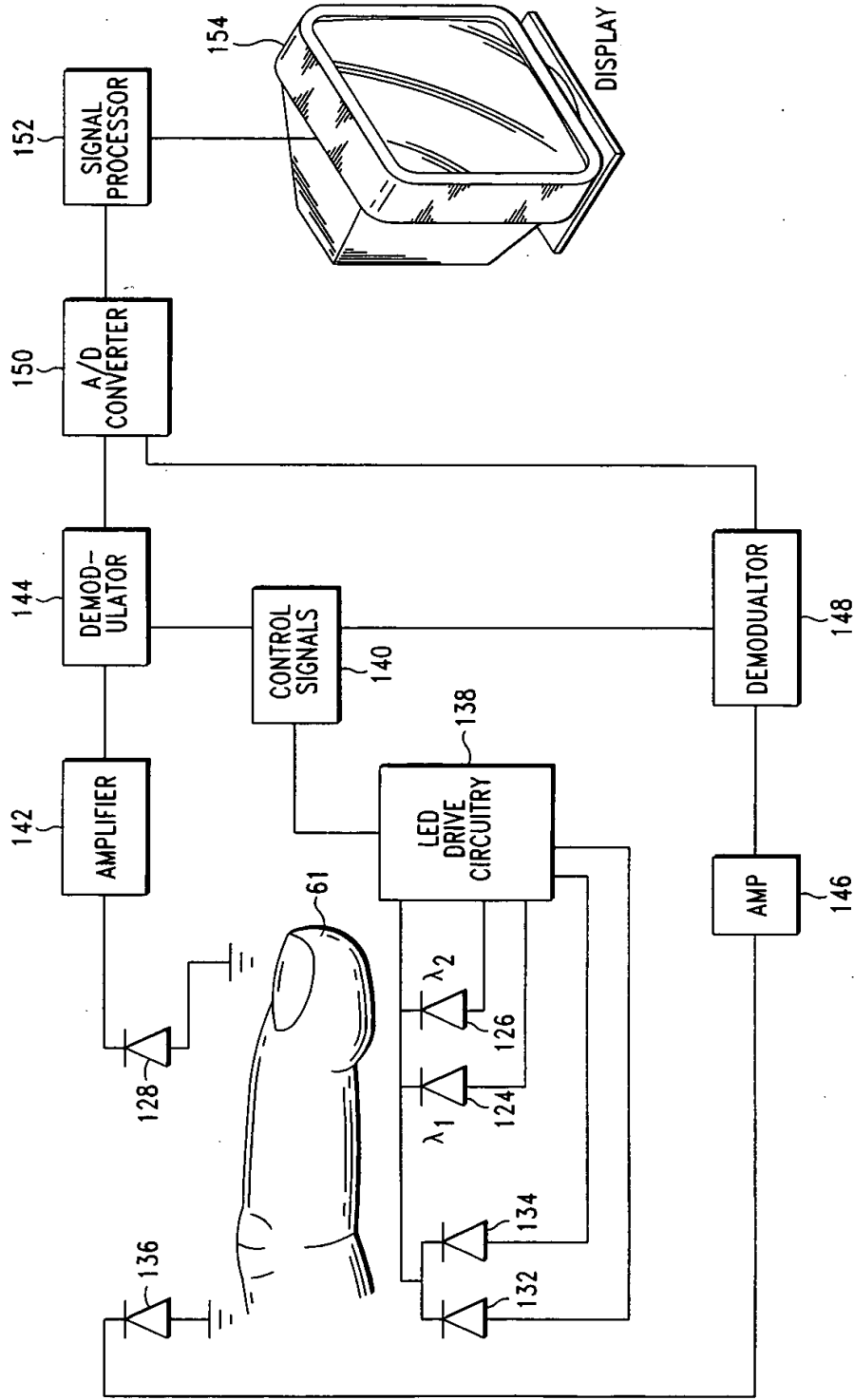


FIG.-14

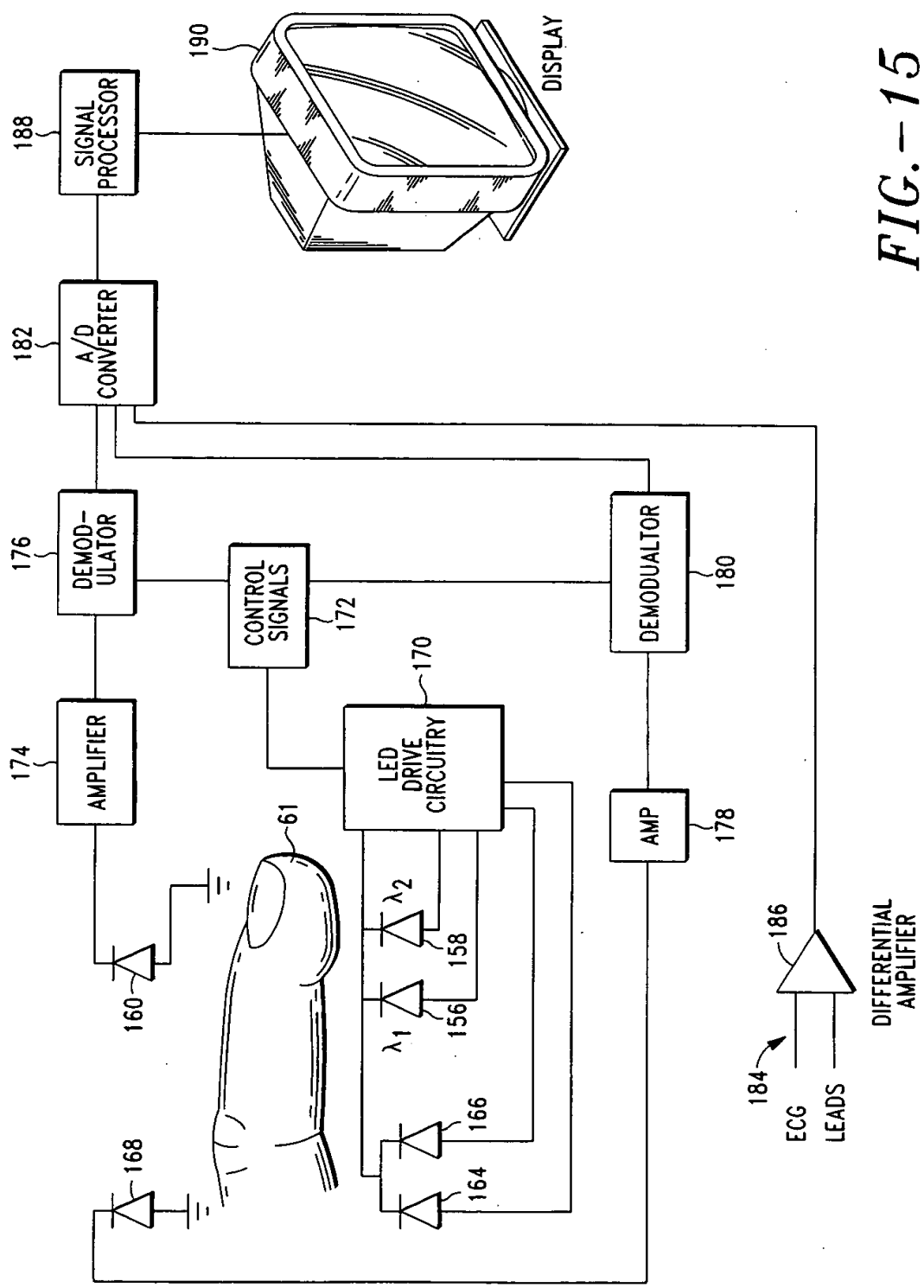


FIG.-15

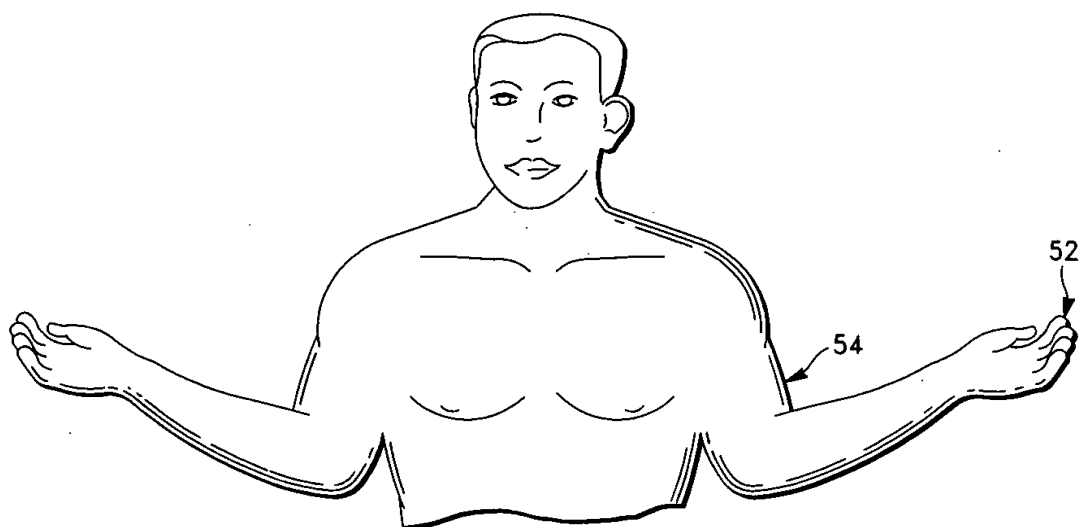


FIG. - 16

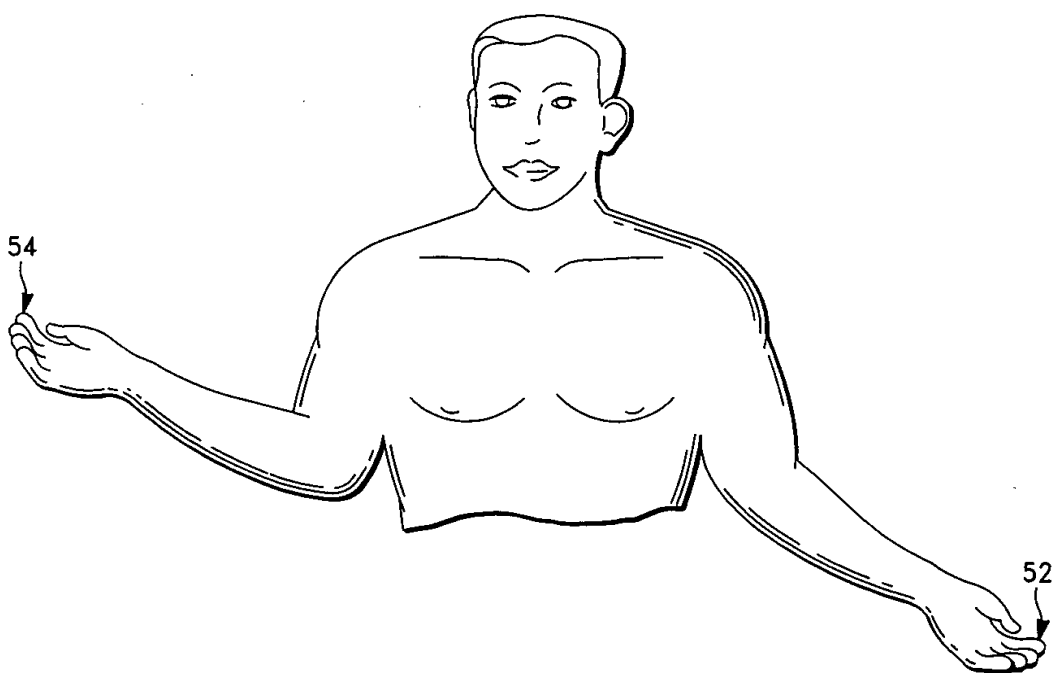


FIG. - 19

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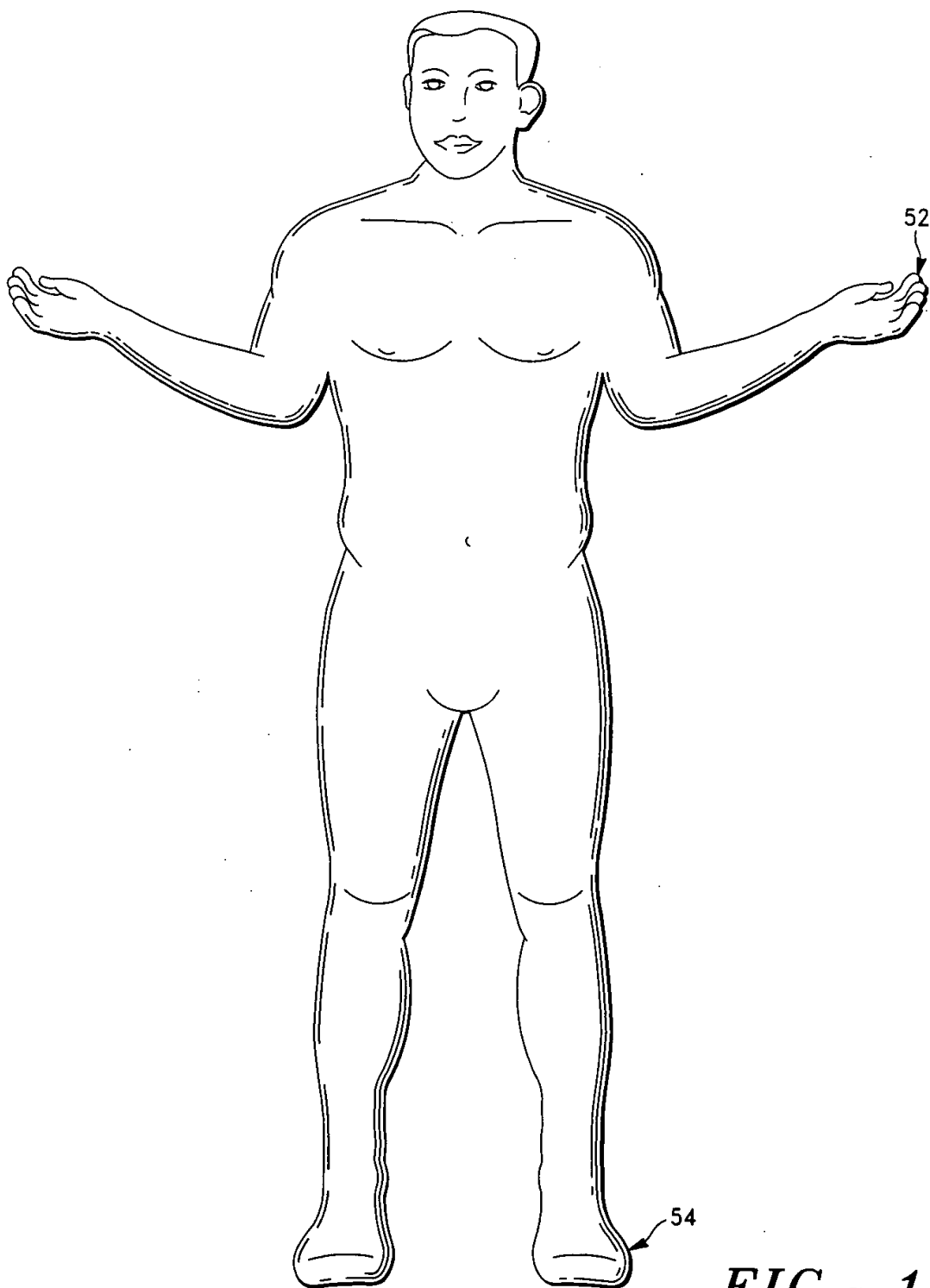


FIG.-17

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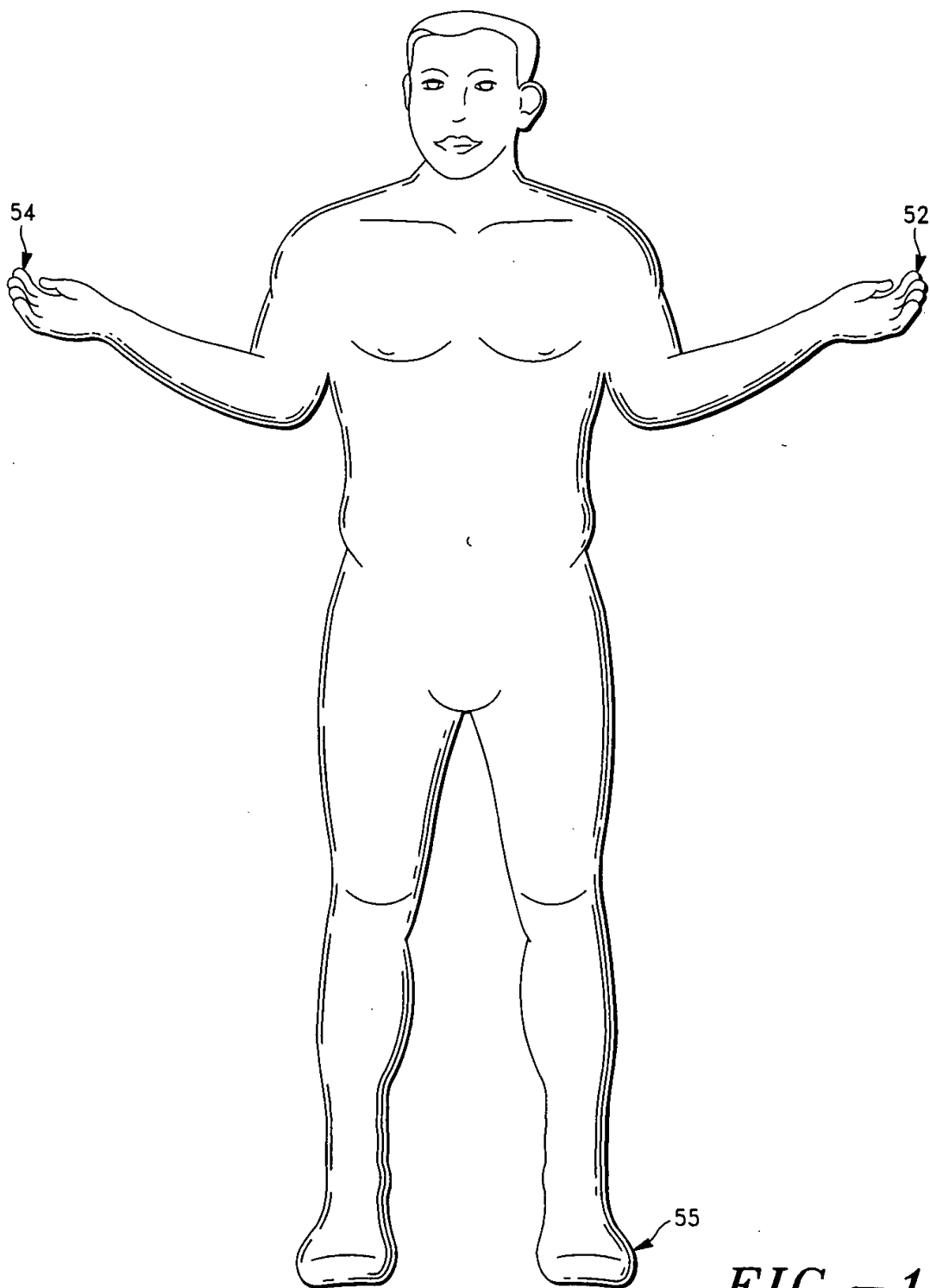


FIG. - 18

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F020516000

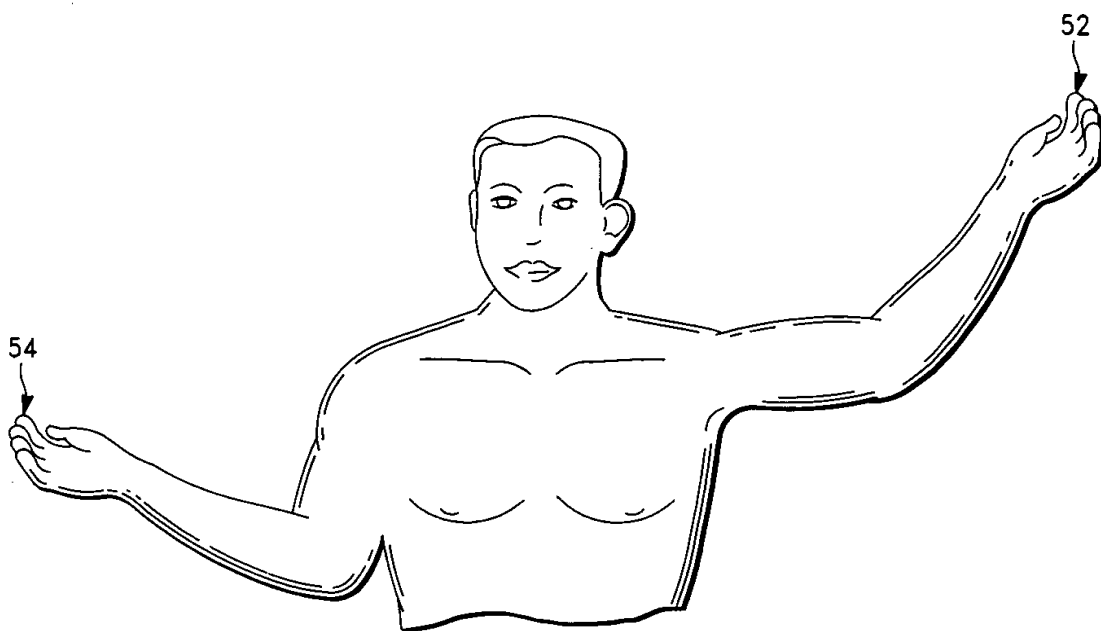


FIG.-20

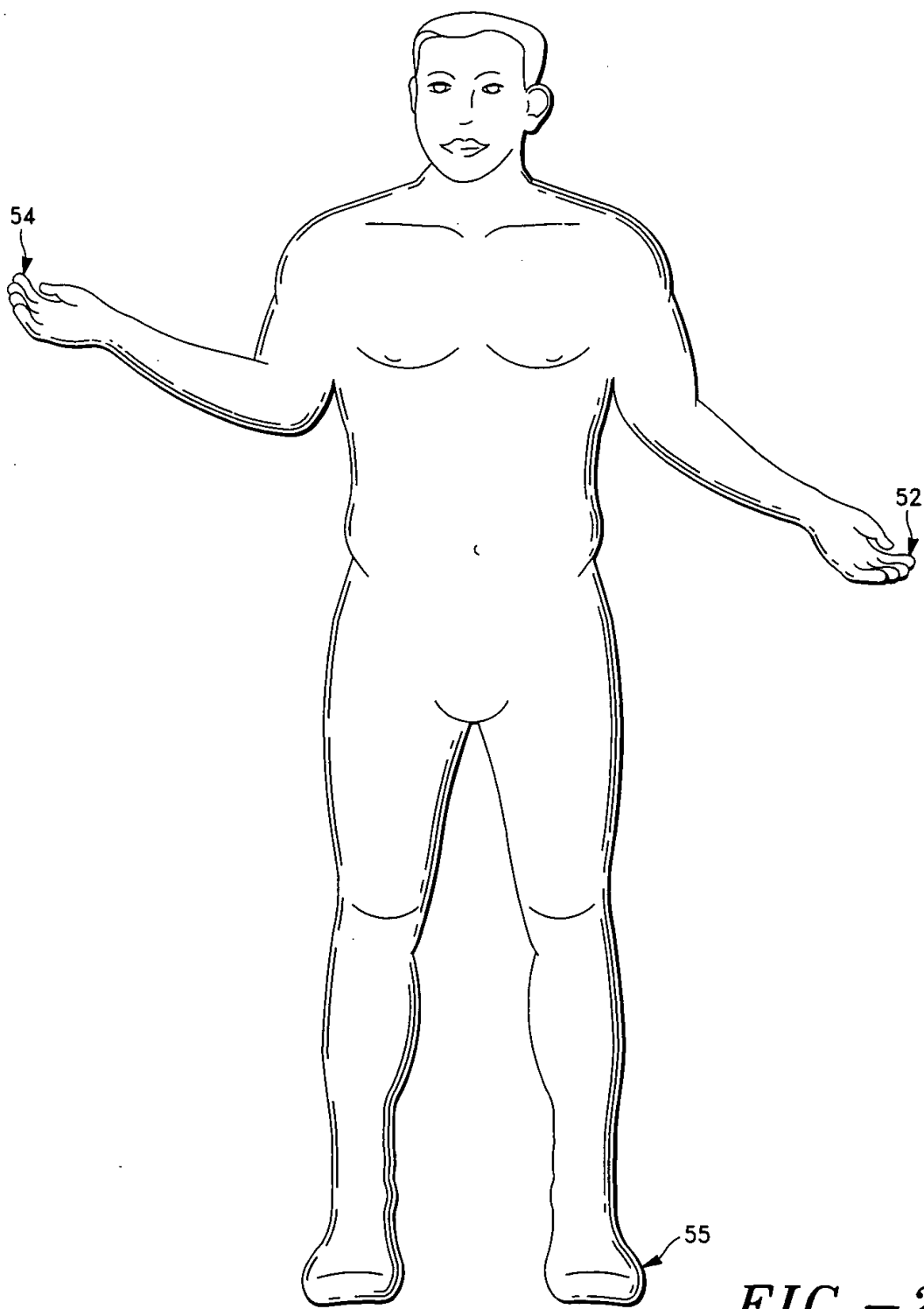


FIG.-21

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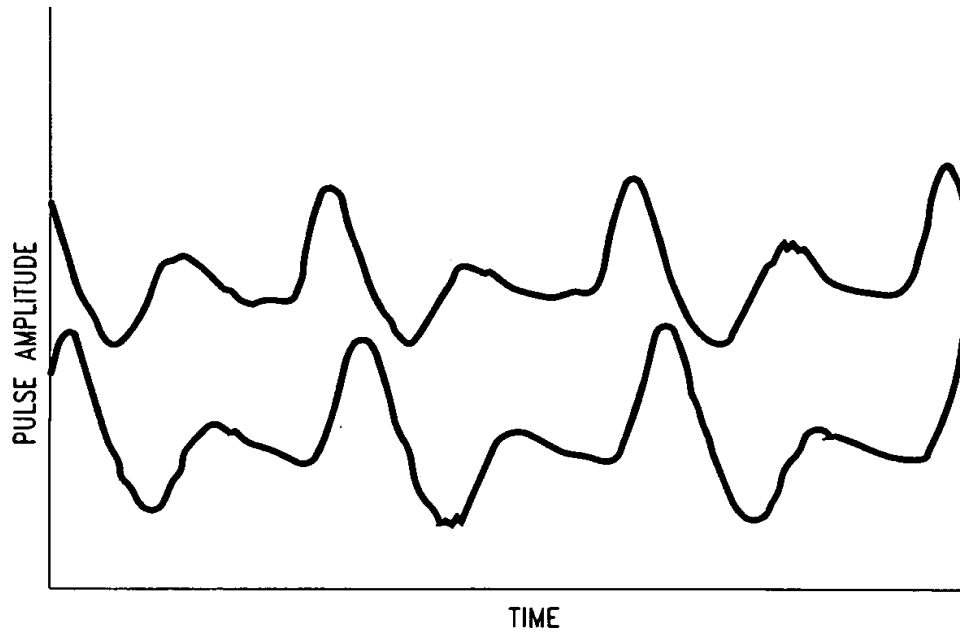


FIG.-22

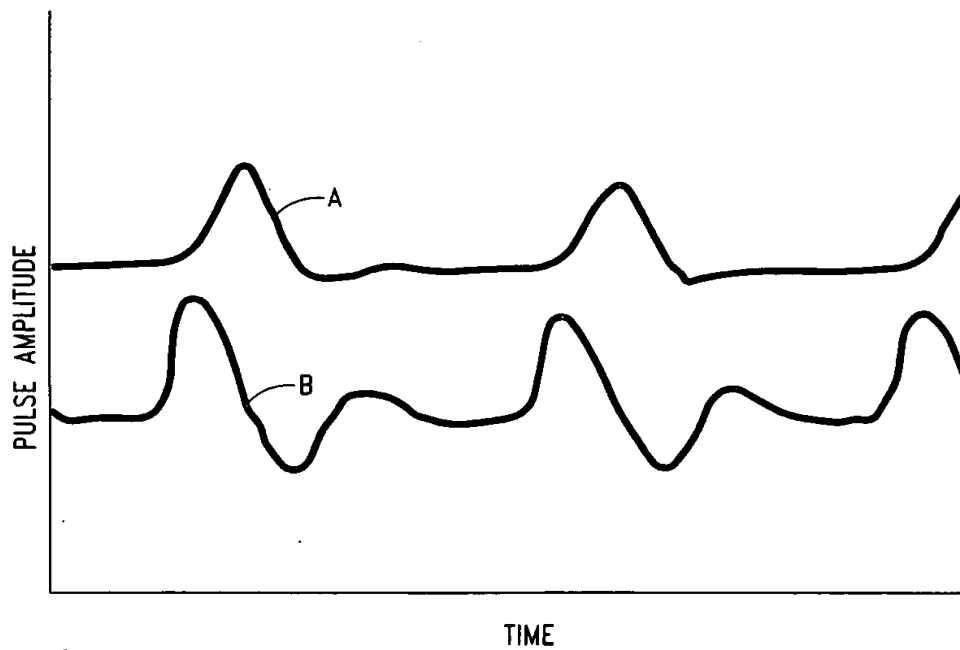


FIG.-23

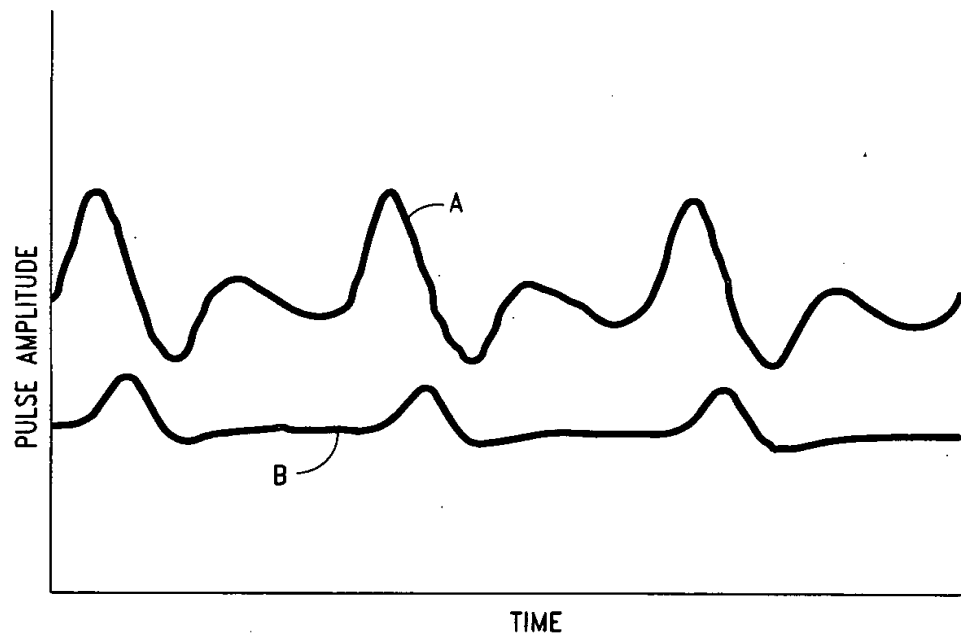


FIG.-24

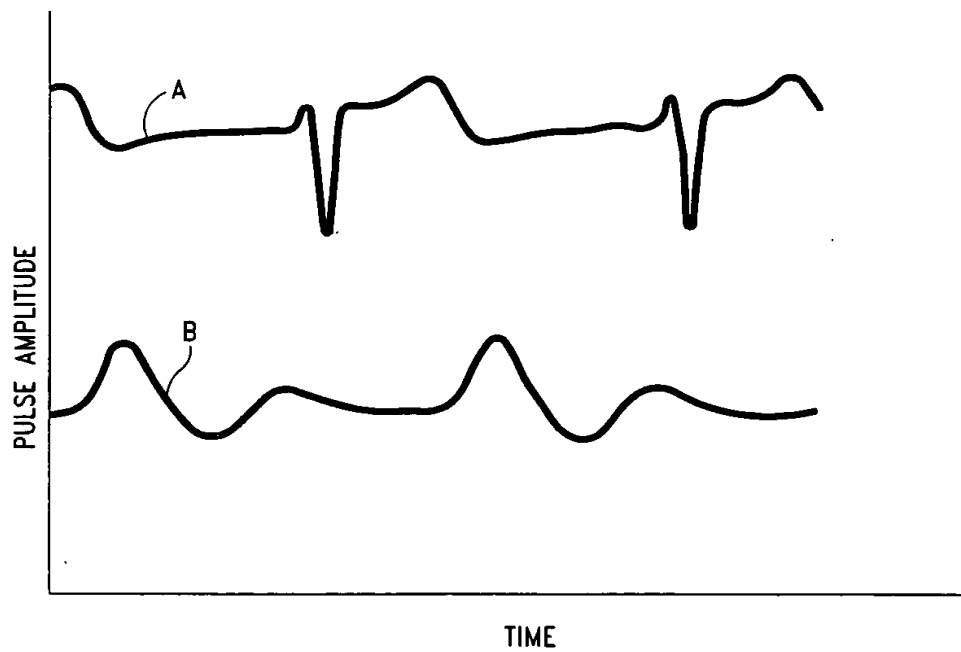


FIG.-25

The graph plots Pulse Amplitude on the vertical axis against Time on the horizontal axis. A horizontal reference line is drawn at the 97.0 level. Two periodic signals are shown: Signal A (solid line) and Signal B (dashed line). Signal A has a higher frequency and amplitude than Signal B. Both signals oscillate around the 97.0 baseline. The labels 'A' and 'B' are placed near the peaks of their respective signals.

The graph displays two periodic pulse signals, A and B, plotted against Time. The vertical axis is labeled 'PULSE AMPLITUDE' and has a tick mark at ~ 7.3 . The horizontal axis is labeled 'TIME'. Signal A is represented by a solid line, and Signal B is represented by a dashed line. Both signals are periodic and oscillate around a value of approximately 7.3. Signal A has a higher peak amplitude than Signal B.

FIG.-27

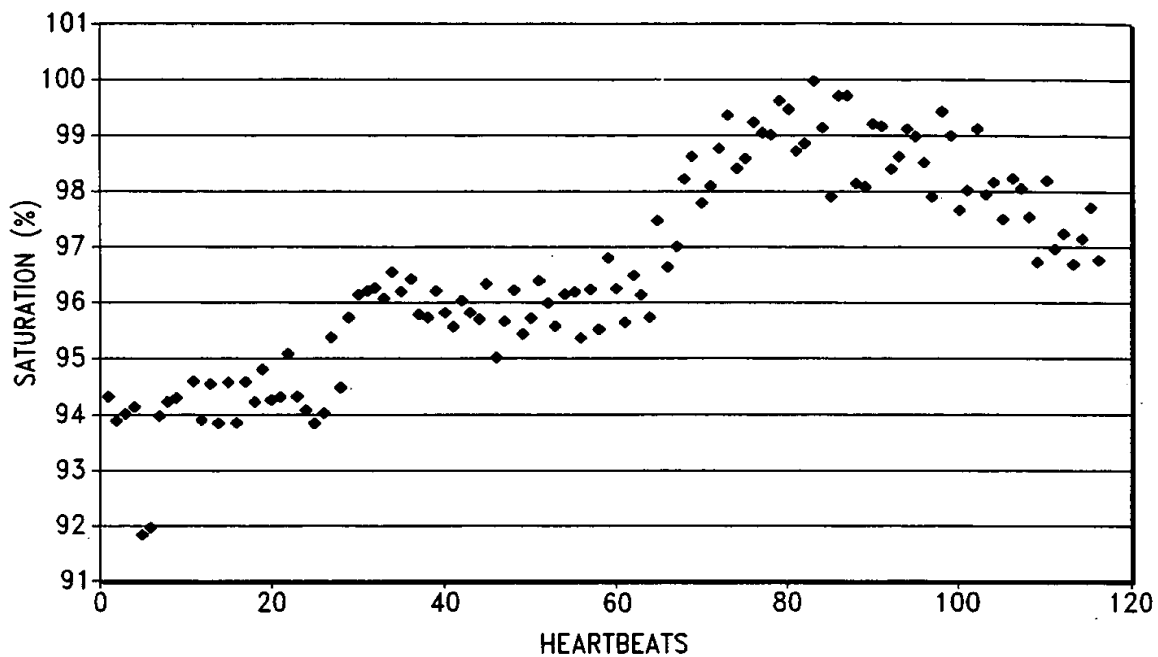


FIG.-28

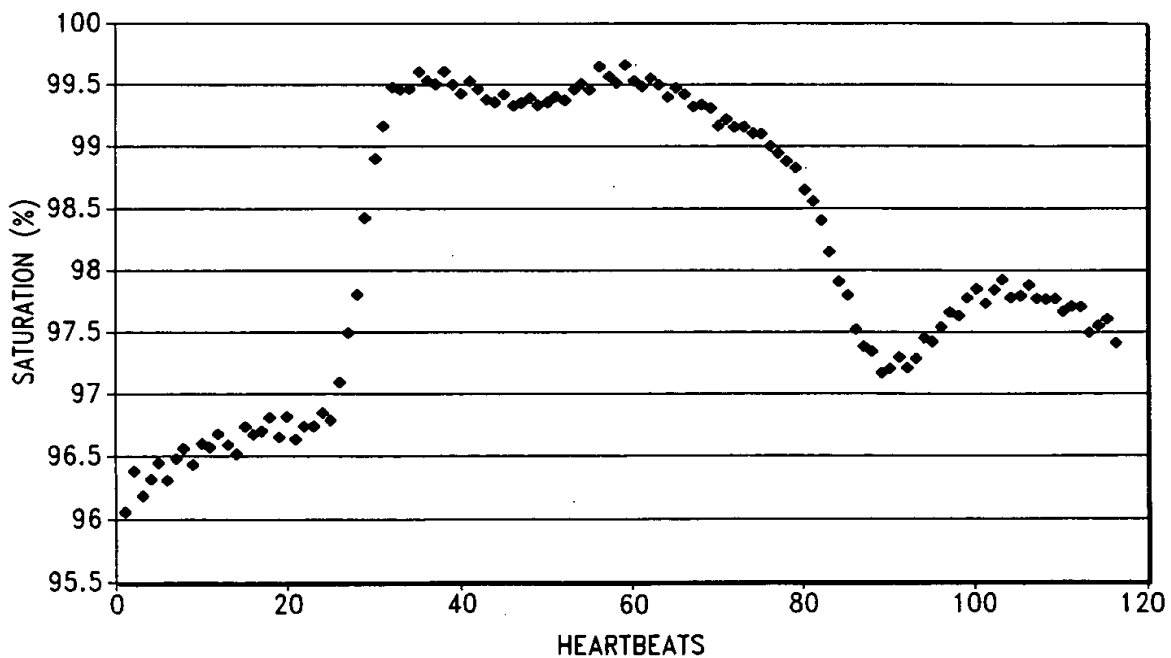


FIG.-29

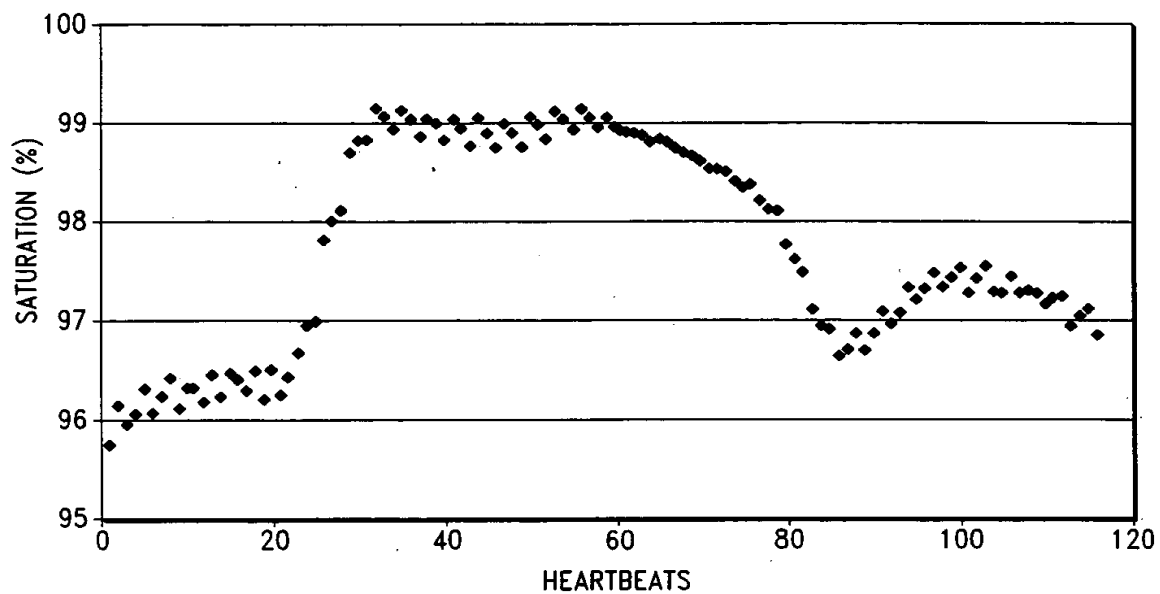


FIG.-30

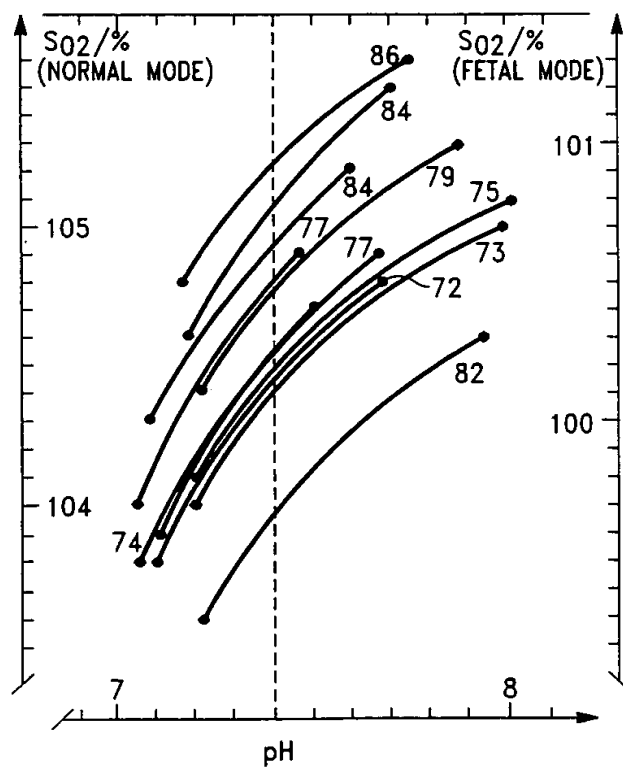


FIG.-31

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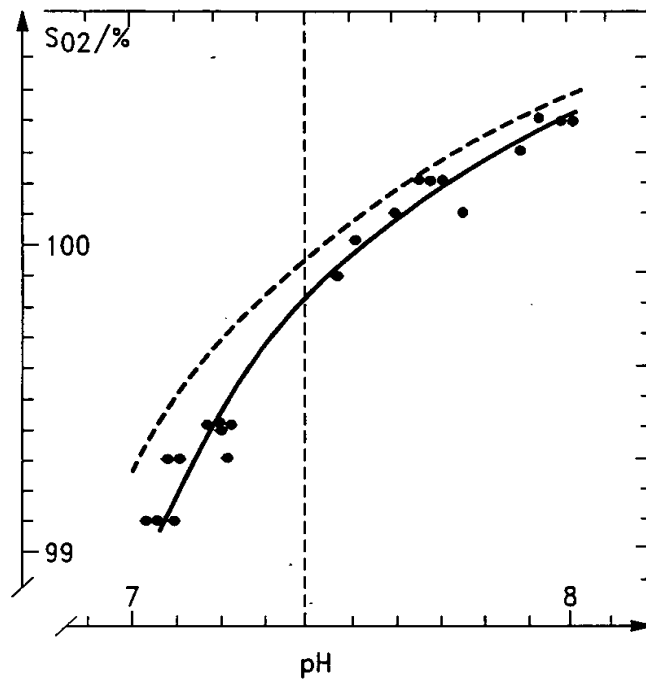


FIG.-32

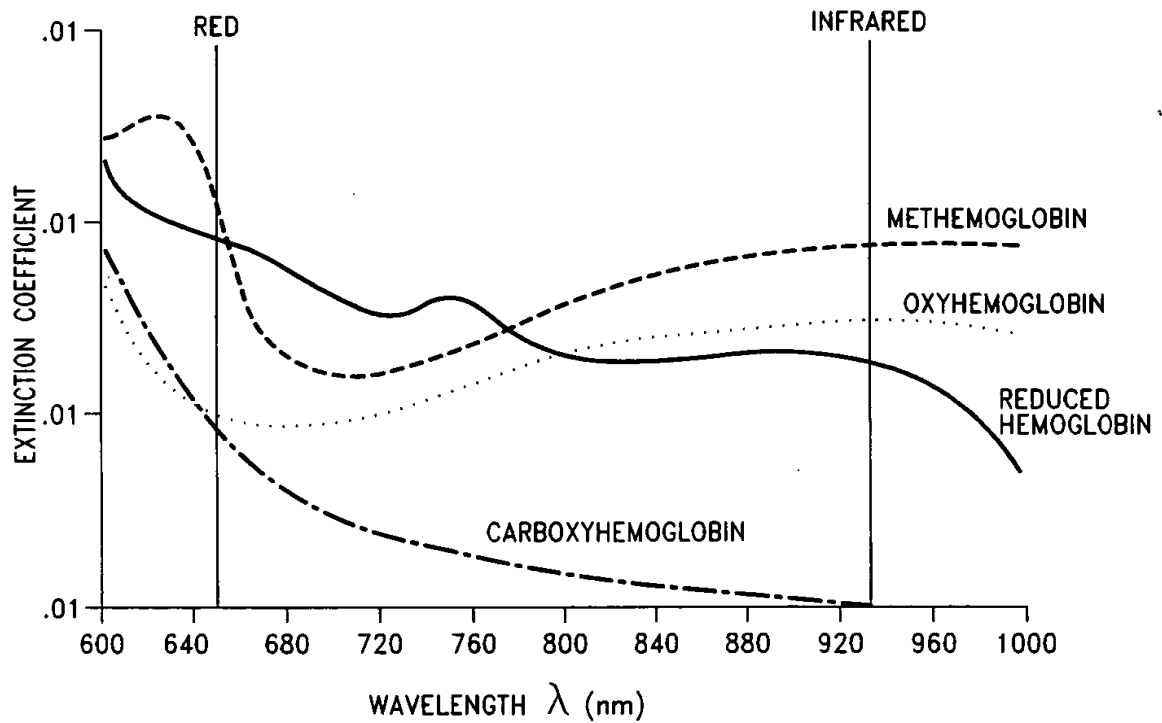


FIG.-34

Computational Algorithm for Determination of Hemoglobin Concentration

```

C      A is the measured absorbance
C      A1 is the absorbance after dividing out extinction coefficients
C      and correcting for saturation
C      A2,A3, ... will be the absorbances at different path lengths,
C      created by multiplying by constants
C      A1,A3, ... and L2,L3, etc.
      constant M2=0.9
      constant M3=0.8
      constant M4=0.7
      constant M5=0.6
      constant M6=0.5
      constant M7=0.4
      constant M8=0.3

C
C      read in the value for hemoglobin absorbance and a value k
C      representing the extinction coefficient for the wavelength and
C      the oxygen saturation
Begin
Read, A
Read, k
A1:=A/k
A2:=A1*M2
A3:=A1*M3
A4:=A1*M4
A5:=A1*M5
A6:=A1*M6
A7:=A1*M7
A8:=A1*M8

C
      k1234 = log(A1) * log(A2) - log(A3) * log(A4)
      k5678 + log(A5) * log(A6) - log(A7) * log(A8)
      kd:=[ log(A1*A2) - log(A3*A4) ] / [ log(A5*A6) - log(A7*A8) ]

C
      combine all the A terms that occur as coefficients,
      kAc := log(A2/A1) - log(A3/A1) - log(A4/A1) - [(kd * log(A5/A1)) -
      - [kd * log(A6/A1) + [kd * log(A7/A1)] + [kd * log(A8/A1)]

C
      combine all the A terms that occur alone
      kAa :=- [log(A3/A1) * log(A4/A1)] ) -
      - kd * [log(A5/A1) * log(A6/A1)] +
      + kd* [(log(A7/A1) * log(A8/A1)]

C
      k1234 - ( kd * k5678) = kig(L) * kAc + kAa
      log(L) = [k1234 - (kd * k5678) - kAa] / kAc
      L = antilog{[k1234 - (kd * k5678) - kAa] / kAc}
      use EXP or antilog function
      L = EXP([k1234 - (kd * k5678) - kAa] / kAc)
      L is the path length
      C is the concentration of hemoglobin
      C = A1 / L

C
      END
  
```

FIG.-33

Figure 1 is a line graph showing the millimolar extinction coefficient (ϵ) on the y-axis (ranging from 0 to 12) versus wavelength (nm) on the x-axis (ranging from 450 to 700). Four curves are plotted, corresponding to different pH values: pH 6, pH 7, pH 8, and pH 9. The curves show two main absorption peaks: one around 500 nm and another around 580 nm. The peak at 580 nm is more pronounced at higher pH values.

Wavelength (nm)	pH 6 (ϵ)	pH 7 (ϵ)	pH 8 (ϵ)	pH 9 (ϵ)
480	8.5	8.5	8.5	8.5
500	8.0	8.5	9.0	9.0
520	7.0	7.5	7.5	7.5
540	6.5	7.0	7.8	9.5
560	4.5	5.5	6.5	8.5
580	4.0	4.5	6.2	8.5
600	3.0	3.5	5.0	6.5
620	2.5	3.0	3.5	4.0
640	1.5	2.0	2.5	2.5
660	0.5	0.5	0.5	0.5
680	0.2	0.2	0.2	0.2
700	0.2	0.2	0.2	0.2

2

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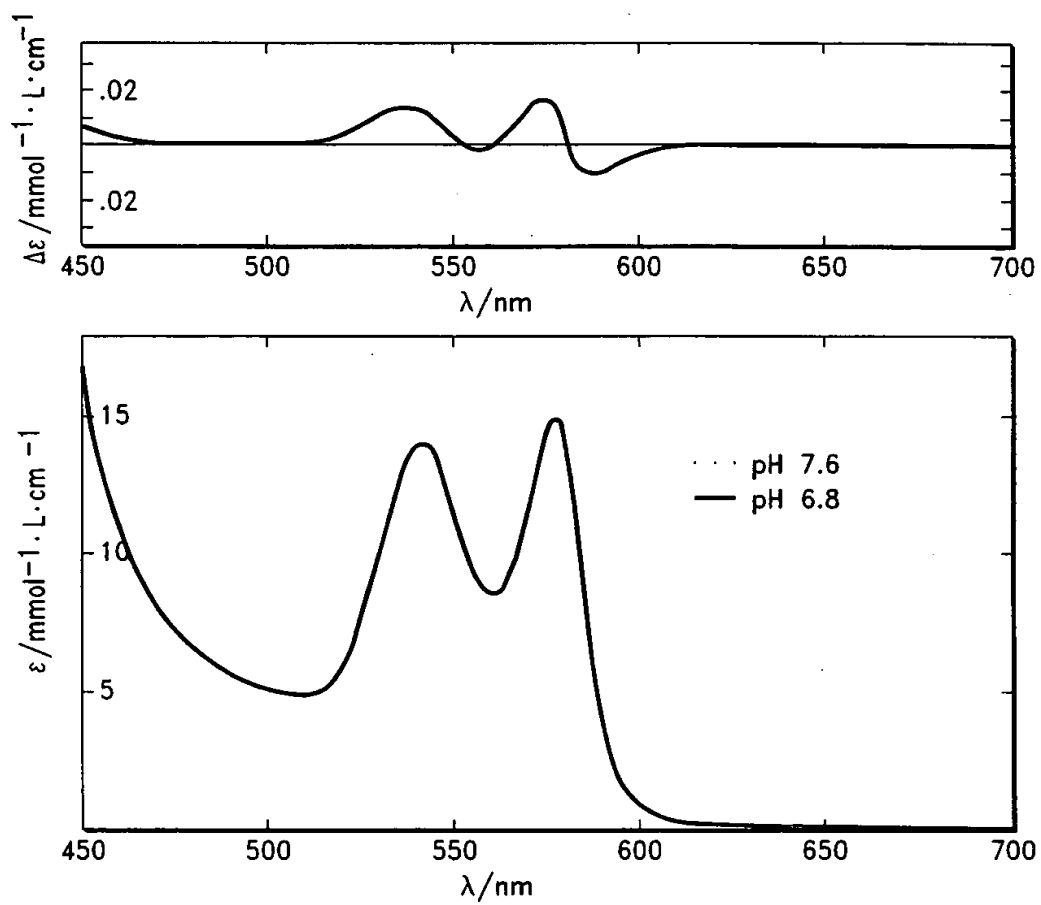


FIG.-36

Figure 1 consists of two vertically stacked plots. The top plot is titled "difference spectrum" and shows ΔA (y-axis, ranging from -0.2 to 0.2) versus λ/nm (x-axis, ranging from 450 to 700). The curve shows a negative peak around 515 nm and two positive peaks at approximately 540 nm and 575 nm. The bottom plot is titled "millimolar absorbance" and shows A (y-axis, ranging from 0 to 15) versus λ/nm (x-axis, ranging from 450 to 700). It displays two curves for HbCO: a solid line for pH 7.7 and a dotted line for pH 6.7. Both curves show a broad peak around 540 nm and a sharper peak around 575 nm, with the pH 6.7 curve showing slightly higher absorbance at the peaks.

A scatter plot showing the relationship between Heartbeat (X-axis, 0 to 120) and Saturation (%) (Y-axis, 95.5 to 99.5). The data points show a clear trend: saturation starts at approximately 95.7% at heartbeat 0, rises to a peak of about 99.1% between heartbeats 30 and 60, and then drops to a minimum of about 96.6% around heartbeat 85, before rising again to approximately 97.1% at heartbeat 115.

A scatter plot showing the relationship between heartbeats and oxygen saturation for a single subject. The x-axis is labeled 'HEARTBEATS' and ranges from 0 to 120. The y-axis is labeled 'SATURATION (%)' and ranges from 95 to 102. The data points show a general upward trend, starting around 97% saturation at 0 heartbeats and reaching approximately 100.5% saturation by 120 heartbeats. There is a notable dip in saturation around 30 heartbeats, followed by a sharp increase between 40 and 60 heartbeats.

FIG.-41